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Mr. C. A. Purpus, who for some time has been active in introducing the choicer species of our Western and Pacific coast vegetation into European gardens, contributes to the *Mitteilungen der Deutschen Dendrologischen Gesellschaft* for 1897 an account of his travels in the southern Sierras of California and the Argus and Madurango ranges.

Eriogonum, one of the more puzzling genera of Apetalæ, is enriched by the addition of twenty-two new species, in a paper by Dr. Small, published in the *Bulletin of the Torrey Botanical Club* for January. In the same article, *Oxythea parishii* Parry is made the type of a new genus, *Acanthoscyphus*.

The tree opuntias of the United States form the subject of an interesting short article in the February number of the *Botanical Gazette*, by Professor Toumey, whose opportunities for the study and cultivation of cacti, in Arizona, are unrivaled.

A paper on some biographical difficulties in botany, — some of which apparently might be escaped by carrying the application of the principle of priority to Tournefort's work, instead of stopping with the species *Plantarum* of Linnæus — read before the Botanical Society of America in Toronto last summer, by Prof. E. L. Greene, has been reprinted from volume iv of the *Catholic University Bulletin*, of Washington.

M. Cardot, in the *Bulletin de la Société d'Histoire Naturelle d'Autun* for 1897, publishes a Répertoire Sphagnologique, an alphabetical catalogue of all known species and varieties of Sphagnum, with indication of synonymy, bibliography, and geographical distribution. The pamphlet, which is separately paged, contains 200 pages, octavo.

The Botanical laboratory of the University of Siena has begun the publication of a new journal,¹ the first fascicle of which, for January, 1898, contains a report on the botanical garden and museum for the scholastic year 1896-97, and a number of scientific papers, chiefly on fungi, — a group with which Italian botanists are very largely occupied.

PALEONTOLOGY.

Pleistocene Flora. — For a number of years the Pleistocene flora of Canada has formed the subject of special investigation, chiefly by Sir Wm. Dawson and Professor Penhallow, of Montreal, and Prof.

¹ *Bull. lab. bot. R. Univ. Siena.* Redatto del Dott. Fl. Tassi.

A. P. Coleman, of Toronto. The results reached were of such interest and scientific importance that the British Association at its last meeting at Toronto appointed a special committee, consisting of Sir J. W. Dawson, chairman, Prof. A. P. Coleman, secretary, Prof. D. P. Penhallow, Dr. H. M. Ami, and Mr. G. W. Lamplugh, "to further investigate the fauna and flora of the Pleistocene beds in Canada," and for this purpose made a grant of £20.

For several months past the work of this committee has been actively prosecuted under the immediate direction of Professor Coleman. The results so far reached afford a valuable extension of our previous knowledge respecting the vegetation of that period, and confirm former conclusions as to climatic conditions.

In his last summary of the Pleistocene flora¹ Professor Penhallow discusses the character of the vegetation observed in deposits of five principal localities, — Moose River, Montreal, Green's Creek and Berserer's Wharf near Ottawa, Scarboro Heights near Toronto, and the Don Valley in the immediate neighborhood of Toronto, from which places sixty-three species of plants have been obtained. All of the plants are found to be identical with existing species. The results of the investigations now in progress will show important additions to this list.

Considered in relation to climate, the deposits of the Don Valley represent a vegetation of a more southern type than that now existing there, such as at present flourishes in the Middle States. In all the other deposits the vegetation represents similar climatic conditions, and is comparable with that which now flourishes in the same or slightly more northern situations. A comparison of the Scarboro and Don beds by Professor Coleman leads to the conclusion that the former were laid down first; hence the inference that in the vicinity of Toronto the vegetation and the climate were at first comparable with what may be found at the present time from the southern shores of Labrador through the region of the Gulf of St. Lawrence and the Province of Quebec; that at a subsequent period the climate became warmer, with the introduction of more southern types of plants, such as the osage orange, and that, finally, another change brought about a partial return to the original conditions, with the development of the climate and flora as at present known.

One of the most interesting features of the material derived from these beds is the very perfect state of preservation in which much of

¹ Contributions to the Pleistocene Flora of Canada. *Trans. R. Soc. Can.*, Ser. 2, 1897. II. iv. 59.

the wood is found. In most cases the wood may be cut with a saw; it softens readily in water, and sections may be cut in the usual manner with as much facility as if taken from an existing tree. In many cases, also, the grain and bark are recognizable, while the interior structure is preserved with great perfection. P.

Polish Palæozoics, by Gürich.¹ — The district described in this memoir is in Southern Poland, mainly in the country between and around Kielce and Opatów. This region has been subjected to considerable oscillation, and the rocks are folded and faulted to a marked degree. The geological section extends from the Cambrian to the top of the Devonian, and the strata reach their greatest development in the Devonian. The Cambrian is represented by a single member, the Silurian by four members, and the Devonian by twenty. The Devonian fauna is especially rich, and represents, together with others, the typical zones of *Rhynchonella caboides*, *Stringocephalus burtini*, and *Goniatites intumescens*, so characteristic of certain faunas and horizons in other parts of the world.

The new genera described comprise Plagiopora, a tabulate coral; Ceratophyllum and Hexagonum, cyathophylloid corals; Spirillopora, a bryozoan; and four genera of ostracoda, Antitomis, Trigonocaris, Polyzygia, and Poliniella.

Interesting studies are made on the amount of crustal oscillation, and the nature of the sediments, whether shore, near shore, off shore, or deep sea. These observations are plotted in curves, on tables of the geological succession for various localities. C. E. B.

¹ Das Palæozoicum Polnischen Mittelgebirge, von Dr. Georg Gürich. *Transactions of the Imperial Mineralogical Society of Russia*, vol. xxx, 1896.